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Soil and Water Conservation News

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United States Department of Agriculture
Soil Conservation Service

1985 Farm Bill:

Creative Answers to Tough Questions



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Guest Editorial

Our National Conservation Ethic

The Food Security Act of 1985—the Farm Bill—gave our country its most significant conservation legislation in more than 50 years. You and I supported this legislation because it is good for our land and economy, and it reinforces the conservation and stewardship ethic that we will pass to our children.

Many Americans have worked long and hard to weave a conservation ethic into the fabric of our culture. Indeed, most farmers and ranchers inherently love their land and understand the lessons of history that document the collapse of the ancient Athenian democracies and other civilizations that did not attend to their soil and water resources properly.

Yet, in spite of a demonstrated 50-year commitment to the conservation ethic by many Americans, I submit we need to do much more to define what we mean by a conservation ethic. To me, a love of our soils, our farms, and our land means going beyond what is convenient to do. A commitment to soil stewardship means doing the right thing for soil conservation with or without financial assistance from the government. This will result in individual personal efforts to carry out sound conservation practices on the land.

The 1985 Farm Bill provides the strongest possible incentives for producers to work with government to develop conservation plans and apply conservation systems to our agricultural lands. There are 118 million acres of highly erodible cropland currently in production. About 35 million acres of this are covered by a conservation system whereby soil erosion is controlled. However, nearly 83 million acres on 820,000 farming operations still need a current conservation plan and a conservation system applied to control soil erosion; or, they should be idled and put into vegetative cover under the 40 million-acre Conservation Reserve Program. By working together, we can put more conservation on highly erodible cropland in the next 2 to 7 years than has been done over the past 50 years.

Congress has provided new legislative instruments to accomplish this. We have a strong and important volunteer workforce in the Earth Team. We are installing rapidly the computer and software systems in county level field offices that will increase the quality and

quantity of the work we do. We have the support of the private sector. And, finally, we have the creativity and resourcefulness of dedicated people working to accomplish more than we ever have before.

But frankly, all this will not be enough if there does not exist an enduring and strongly held ethical commitment by Americans everywhere that this is the right thing to do. The conservation we put on the land by 1995, and the conservation ethic we cultivate in the process, will enable future generations to prosper far better than we do.

I believe we conservationists must ask ourselves just what we mean when we say we have an enduring conservation ethic and love of the land. We need to reinforce and support farmers and ranchers who believe soil conservation is more than good business. Soil conservation means less soil erosion, improved water quality, improved wildlife habitat, and all the rest. A strong conservation ethic that recognizes the importance of personal action and which goes beyond what is convenient must become an integral part of American agriculture as it competes in the global economy. This will not have meaning if we don't do it with gladness and a cheerful heart . . . as a labor of love for our land.



George S. Dunlop
Assistant Secretary
Natural Resources
and Environment

Cover: Strips of small grain stubble contrast with strips recently planted in small grain on this farm in Gallatin County, Mont. (Photo by Ron Nichols, photographer, SCS, Washington, D.C.)

Richard E. Lyng
Secretary of Agriculture

Wilson Scaling, Chief
Soil Conservation Service

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Farm Bill

On the Road to 1990

What does the Food Security Act of 1985 (FSA) mean to the Soil Conservation Service? It means providing information to every farmer in the Nation and calculating erosion rates, field by field, practice by practice. It means helping thousands of farmers meet a 1990 deadline for developing conservation plans that will protect the Nation's soil and water resources.

The FSA contains provisions designed to reduce cropland erosion, protect valuable wetlands, and, at the same time, reduce surplus commodity production. These provisions, known as the Conservation Reserve, conservation compliance, sodbuster, and swampbuster, encourage farming on land suited to farming and discourage farming on land not suited to farming. In most cases, farmers who want to keep farming

highly erodible land will have to have an approved conservation plan by 1990 in order to retain their eligibility for programs of the U.S. Department of Agriculture (USDA).

SCS has been working with other agencies to provide information about the FSA's conservation provisions through public speakers, newsletters, exhibits, press releases, letters, fact sheets, posters, brochures, slide shows, public service announcements on radio and television, and personal contacts. This summer, nearly 4 million brochures, entitled "Time is Running Out," will be mailed with local newsletters of USDA's Agricultural Stabilization and Conservation Service (ASCS).

In most States, the FSA has dramatically increased the demand for SCS's technical assistance. Midway through the second year of the program, SCS field office staffs have already helped farmers identify 18 million acres of highly erodible cropland and place it in the Conservation Reserve Program (CRP). With SCS technical assistance and ASCS cost-sharing assistance, the farmers have agreed to plant this land to grass, trees, and wildlife cover and keep it out of production for at least 10 years.

By and large, SCS is handling the FSA workload through increased coordination with other agencies and private groups and greater use of new technologies, group planning sessions, streamlined planning procedures, volunteer assistance, and reassignments of personnel. Some specific activities include:

Arizona

The State's major erosion threat comes from wind and is compounded by the discing under of cotton stubble to control insects. SCS and ASCS have developed a 1-page worksheet to help Arizona's cotton farmers understand what it takes to control wind erosion and comply with the FSA. Farmers fill out the worksheet when signing up for any USDA program that requires conservation compliance and indicate whether they are applying at least 22 inches of irrigation water per season, the cropping sequence, the approximate dates for seedbed preparation and planting, and whether crop residues will be left, or the date they will be disced under. SCS field office staffs review these worksheets to calculate and document the wind erosion rates for the identified fields. If the erosion rates are excessive, a member of the SCS staff



A combination of contour stripcropping and single-row field windbreaks protect this highly erodible cropland in North Dakota from erosion. In addition to protecting the soil from wind erosion and conserving soil moisture, the windbreaks provide habitat for wildlife.

contacts the farmer and helps develop an adequate erosion control system. Local conservation districts approve the final plans.

Colorado

The Colorado Food and Agriculture Council is producing a video tape to be used by SCS field offices in group planning activities. USDA's Forest Service staff in Denver will assist SCS with the production. The 10-minute tape is designed to be shown to small groups of farmers at the initial meeting on developing conservation plans that will help the farmers meet the requirements of the FSA conservation compliance provision. It will show how a conservation plan is developed, including information about differing soil types, how soil losses are calculated, and the development of alternative conservation systems.

Indiana

The Washington County Soil and Water Conservation District used its April 1987 newsletter to inform farmers of the roles and duties of the different government

agencies in carrying out the conservation provisions. "Don't wait until next year" has been the message in newsletters of districts concerned that there could be a last minute demand for conservation plans to meet the 1990 deadline for conservation compliance.

Iowa

Four information tools are being jointly developed by the Iowa and Nebraska State offices of SCS to help field office staffs explain soil loss calculations and the FSA. A video tape and a slide-tape presentation will explain what's expected of a farmer or rancher under FSA, including the conservation planning process. These will both be 6 minutes long and will be shown in field offices to people who ask about FSA, as well as at small group meetings and display booths. A color poster, "How Your Conservation Choices Stack Up for Erosion Control," will be used before and during conservation planning sessions. This material will help farmers visualize how much they can reduce soil loss by applying the different conservation practices and combinations of practices available. The same material will be used in a 4-panel leaflet, "How to Stay Eligible for USDA Programs."

Kentucky

The SCS field office in Mayfield, Graves County, has developed computer programs for determining eligibility of fields for the CRP, developing conservation plans for the conservation compliance and sodbuster provisions, and keeping track of farmers' certification (form AD-1026's). Thus far, the county has 641 CRP contracts and the field office has received more than 1,400 AD-1026's covering 4,000 units of land. The field office staff consists of 3 full-time employees and 1 part-time employee, who have been assisted by the district clerk and, during CRP signups, a civil engineering technician and a soil scientist.

Michigan

The *Michigan Farmer* magazine recently featured a three-part series on the FSA: "Getting with the program—You must conserve soil or lose your right to get farm payments," "Knowing where you stand—SCS formula ID's highly erodible fields; watch out for wetlands," and "Farming highly erodible fields—tillage systems and crop rotations will cure most abuses." The Michigan Farm Bureau's *Rural Living* magazine has also published details on the FSA.

Montana Taps Creativity

The search by the Soil Conservation Service in Montana for new approaches to conservation planning is tied to the requirements of the conservation provisions of the Food Security Act of 1985 (FSA). Preparing conservation plans for about 24,000 farmers on the State's 9.5 million acres of erodible cropland by the legislation's 1990 deadline cannot be done through traditional one-on-one planning.

To determine alternatives, SCS and conservation districts in Montana are tapping their creativity through a problem solving technique. Over the past year, SCS has sponsored 2-day workshops on problem solving for each of the State's four administrative areas.

A consultant from Montana State University leads workshop participants, who are divided into groups by field office, through a brainstorming exercise in which they list as many ways as possible to handle the increased conservation planning load. The groups go through their list to determine the most promising approach, identify all the steps needed to implement the idea, and set a measurable 1-year objective. This problem solving technique, called Synectics, was developed several years ago by a creativity group in Boston, Mass.

The ideas that the groups developed for implementing the conservation provisions of the FSA are not novel—just more efficient ways to get the job done. Nearly all the ideas deal with group planning and

providing farmers and ranchers with materials to familiarize them with conservation planning. The efficiency comes in sharing the available staff time with more than one producer.

For example, the Fort Benton and Big Sandy SCS field offices are giving farmers and ranchers a kit that contains information on erosion equations, cropping systems, crop residues, and tillage operations. The kits are being introduced during agriculture related meetings and informal gatherings in the county. Over 100 producers have used the kit and say it has helped them to better understand the conservation planning process. The SCS staff says that planning can be completed more quickly with farmers and ranchers who have used the kit.

The Shelby field office has developed a conservation planning kit for use in small group meetings. The kit contains informa-

Minnesota

A total of 25 government agencies, hunting and fishing clubs, and environmental groups have been working together to inform Minnesota farmers about the FSA. They are also informing farm appraisers, insurance companies, and legislators about possible impacts of the FSA. SCS is encouraging major banking institutions and organizations in the State to advise their farmer clients of the conservation compliance requirement for developing a conservation plan for highly erodible cropland by 1990 in order to remain eligible for benefits under certain USDA programs. The SCS State office is working with several agencies to develop a publication that will help farmers prepare much of their own conservation plans for conservation compliance purposes. The Minnesota Chapter of Pheasants Forever presented its 1987 Conservation Award to the SCS staff in Minnesota for its work in implementing the CRP.

Montana

Even with the agency's computer-assisted management and planning system (CAMPS), the SCS State office estimates that an additional 460 staff years will be needed to meet conservation planning re-

tion for completing conservation planning documents which include clients' objectives; inventory information, such as soils, wind erodibility groups, crop yields, and erosion rates; and conservation treatment alternatives.

The Helena field office is using a combination of an individual and group planning approach. The staff mailed letters to farmers and ranchers in the county explaining the conservation provisions of the FSA and inviting them to begin the conservation planning process. The staff is also organizing group meetings in areas of the county with similar geography, soils, and farming practices. Conservation district cooperators serve as hosts and helpers for the meetings. The materials to be used at these

quirements in the State over the next 4 years as the FSA is fully implemented. The State is counting on volunteers, conservation district employees, and temporary employees to help fill the gap.

Nebraska

Group meetings are being used extensively across the State to answer general questions and give farmers the chance to discuss common problems and alternatives among themselves. Specific questions about individual conservation plans, however, still require one-on-one assistance from SCS. Bill Wester, SCS district conservationist, Loup City, reports that farmers who are scheduled to attend informational meetings request conservation plans at a substantially higher rate than farmers who are just mailed letters advising them of their need for a plan.

New Mexico

Seed and chemical dealers have assisted USDA personnel at meetings to inform farmers about the FSA. Meetings have also been held to discuss alternatives for the growers of specific commodities, such as

peanuts, potatoes, and cotton. Five volunteers are assisting the SCS field office at Carlsbad.

New York

The Cayuga County Soil and Water Conservation District purchased a computer that has significantly reduced the office time required for developing conservation plans. SCS personnel in the county go out initially to collect field data and talk to the farmer. When they return to the field office, they turn the data over to a member of the district staff who runs it through a computer to calculate the soil losses and alternatives. An appointment is then scheduled for the farmer to come to the office to complete the plan and make any needed changes. (See article on pages 8 and 9 of this issue.)

North Dakota

"Is my land highly erodible?" The SCS State office in Bismarck has developed a new matrix system for quickly answering that very question, which is often a farmer's first inquiry about the FSA's conservation provisions. Under the system, all soils in a county are grouped according to their slope and wind erodibility into 16 Conservation Evaluation and Planning Groups (CEPG's).

group planning sessions have been developed and tested by a few selected farm leaders.

The Choteau field office staff worked with the Teton Conservation District to develop a user friendly computer program to help SCS and its clients adjust management options to maintain soil erosion rates at or below acceptable levels. The program calculates soil loss from wind and water erosion and determines the amount of residues needed to adequately protect the soil. The program is based on information from the field office technical guide and soil interpretations.

The Teton Conservation District contracted with a computer programmer to produce the program.

The success in Montana of tapping the creativity of SCS and conservation district employees can be credited to several

things. One is that the problem solving process involved the entire field office and conservation district staff. A second is that each office chose its own strategy and outlined the steps to achieving it.

Later this year, SCS and conservation district staffs will meet to review what they've accomplished in providing more efficient conservation planning assistance and to fine tune their strategy.

Glen Loomis,
State conservationist, SCS, Bozeman, Mont.

A computer-generated chart, or matrix, for each CEPG tells in a glance how much soil loss can be expected on any field, depending on crop sequences and conservation practices. Thus, farmers can compare the current rates of erosion on their fields with the rates under alternative combinations of crop sequences and conservation practices. This makes it easier for farmers to decide on conservation systems that are suited to their operations and that will keep them eligible for USDA programs. It enabled one farmer in Burleigh County to plan conservation systems for 29 highly erodible fields in 3 sections of land in less than 30 minutes. SCS staff from North Dakota recently presented a seminar on the new system, "Accelerated Resource Management Planning," to SCS National Headquarters staff in Washington, D.C.

Texas

In addition to disseminating FSA information through radio spots, news releases, and magazine features, SCS personnel from the State office have met with cotton and peanut growers and representatives from State agencies, professional organiza-

tions, universities, the League of Women Voters, the Sierra Club, the Audubon Society, Ducks Unlimited, and other environmental groups. One meeting in Austin was attended by representatives from 21 organizations. With assistance from the watershed planning staff and other specialists in the State office, field office personnel are using computerized fill-in-the-blank worksheets keyed to soil groups so that conservation treatment alternatives can be easily adapted to individual farms.

Washington

The SCS field office at Colfax reports that its computer is enabling staff to predict erosion, determine highly erodible lands, and develop conservation plans in 20 percent of the time required to do it by hand. The completed documents are printed on the spot, with copies for the farmer, landowner, conservation district, SCS, and ASCS.

Wisconsin

The SCS State office is providing field offices with a CRP Media Tour Kit that they can use in setting up tours for local journalists. The kit includes fact sheets and other handouts, a sample invitation to the media, and a sample schedule of tour stops. Field office personnel are encouraged to take

journalists on a tour of CRP acreage, arrange for them to talk to some of the participating farmers, and show them how the CRP is working. The kit suggests that—to be most effective in promoting the program—tours be coordinated with other agencies and scheduled a week or two before CRP signups.

SCS public affairs specialists in these and other States report that the most successful ideas for handling the increased workload associated with the FSA are developed—often out of necessity—at the field office level. Once the ideas are passed up through area offices to the State office, they are shared in regional meetings with SCS personnel from other States and National Headquarters and with representatives from other agencies involved in carrying out the FSA.

Compiled by **Paul D. Barker**
associate editor, *SOIL AND WATER CONSERVATION NEWS*, Washington, D.C.

Group Planning In Montana

Good old-fashioned teamwork may be the best approach to increased workloads. That's what conservationists in Montana are discovering.

Facing an unprecedented demand for conservation plans, the Pondera County Conservation District in Conrad, Mont., early this year sponsored nine group planning sessions. In all, 98 farmers participated in the sessions and helped to complete initial planning for controlling wind erosion on a total of 86,000 acres used mainly for wheat and barley. More sessions are planned.

The highest praise for the sessions comes from farmers who once thought of calculating soil erosion rates as a mysterious process. These farmers now understand the process and know what a conservation plan is designed to do.

"I was very apprehensive that I was going to be told how to farm," one farmer explained. "But I feel a lot better about the program now." His neighbor agreed: "Developing a conservation plan was a lot simpler and less restrictive than I expected."

The group planning approach in the county grew out of necessity. More than 70 percent of the more than 600 soil map units in the county are highly erodible because of their susceptibility to wind erosion. And, according to the conservation compliance provision of the Food Security Act of 1985 (FSA), nearly all of the county's 500 farmers will need conservation plans by

1990 if they are to remain eligible for many programs of the U.S. Department of Agriculture.

During the first year following passage of the FSA, the Soil Conservation Service staff assisting the Pondera County Conservation District received more than 100 requests for conservation plans. Realizing that they were receiving requests for plans faster than they could develop them with the traditional one-on-one method of conservation planning, the staff brainstormed to come up with a more efficient and effective method. Group planning was their solution.

Before each session, the SCS and district staffs assemble resource information for each of the 9 or 10 farmers scheduled



Stripcropping on this Montana farm protects the soil from wind erosion and conserves soil moisture.

to attend. This information includes soil data, soil interpretations, and maps outlining the highly erodible cropland on the individual farms. The sessions begin with a brief presentation on the fundamentals of wind erosion, soil-loss prediction, the importance of crop residue in controlling erosion, wind erodibility groups, soil-loss tolerance, and how to determine if cropland is highly erodible. The farmers themselves then complete the wind erosion calculations for their highly erodible fields and determine how much residue is needed to keep soil loss at or below the tolerable level. Each farmer then meets with a member of the SCS staff to review the information, discuss alternatives for erosion control, and record the conservation decisions. Most of

the farmers have decided on wind stripcropping and conservation tillage.

The farmers' own involvement in calculating erosion rates and determining the amount of residue needed on the soil surface has given them confidence in the process. The group sessions are "a good system," said one participant. "We can see now how residue relates to erosion rates. When we're told we need 1,000 pounds of residue (to protect the soil), we know exactly what that means and how to figure if we're going to be able to keep that amount."

"I prefer doing it this way," said another. "No one is going to know our land as well as we do. And it becomes more meaningful to us. Also, we can tell right off if the figures are realistic or not."

The group sessions address only wind erosion, the most serious erosion problem

in the county. During followup visits later this year to each farm, the SCS staff will discuss water erosion and other resource concerns with the farmers and help them to complete their conservation plans on another 150,000 acres.

Phyllis Faulkner,
soil conservationist, SCS, Conrad, Mont

Computerized Team Speeds Planning

In response to increased demand, a team in Cayuga County, N.Y., has doubled the number of local conservation plans it does. The team consists of employees of the Soil Conservation Service and the Cayuga County Soil and Water Conservation District, volunteers, and a special computer program.

Cayuga County is in the glaciated Finger Lakes Region of west-central New York. It has gently undulating soils that are used to grow about 165,000 acres of corn, hay, and small grains. There are about 400 dairy farms and 350 cash crop operations.

Nearly every farm in the county has some highly erodible cropland and, according to the Food Security Act of 1985 (FSA), must have a conservation plan by 1990 if the farmer is to remain eligible for many programs of the U.S. Department of Agriculture (USDA). As a result, the local field office of SCS has received an unprecedented number of requests for conservation plans.

SCS's heavy workload in the county has required a switch from the traditional one-on-one, whole-farm planning to an approach that relies on a division of labor and a computer program called NYCOSTS. The computer program was originally developed by USDA's Economic Research Service as

COSTS (Computerized System for Estimating and Displaying Shortrun Costs of Soil Conservation Practices). It was modified to fit New York conditions and renamed NYCOSTS by Phil Teague, an economist with SCS's State office in Syracuse. In about 3 months, NYCOSTS has enabled the team to turn out 100 conservation plans—double what would have been possible without the computer.

The farmers in the county want alternatives that will provide a satisfactory level of soil protection at a reasonable cost. Then they can match these alternatives to requirements for USDA commodity programs. The farmers want to know what practices are needed, how much they will cost, and what effect they will have on acreage bases.

Calculating all of the possibilities without the computer is a time-consuming task. With the help of the computer and NYCOSTS program, however, the variables can be interchanged and various alternatives printed on paper in a matter of minutes. For each practice, the program calculates the soil savings possible and the cost per ton of soil saved. Many farmers

take the "what if?" approach with the computer to see the benefits and costs of alternative practices.

In addition to helping farmers make decisions, the computer makes the team approach practical for the entire planning process. The process starts when a farmer's application for certification (form AD-1026) arrives in the SCS office. Fred Owens, a volunteer from the Green Thumb program, assembles the form and aerial photographs of the farmer's fields in a brown envelope labeled with the farmer's name and the letters "HEL" (highly erodible land). All future information relating to these fields will be put in this envelope for easy retrieval and documentation.

Next, envelope in hand, an SCS employee visits the farm to collect field data. Clark Jillson, conservation district technician, has developed a short form to help gather the data needed specifically for the NYCOSTS program. The completed form includes the farmer's name, field number, acreage, part of the field, location, type of tillage, existing conservation practice, percent of slope, length of slope, crop rotation, soil type, and any special considerations. Using the form ensures that all the information necessary for the NYCOSTS program



A computer printout of conservation alternatives helps New York farmer Don Mizro, at left, to develop a conservation plan with Robert Ingham, SCS district conservationist. The printout shows the costs and soil savings of various conservation practices. Highest priority is given to treating the highly erodible fields, marked on aerial photographs, at right.



is collected. Once the data has been gathered, the form is returned to Jillson, who enters the data into the computer.

The computer calculates the soil loss on each highly erodible field and prints out alternatives for reducing soil loss. The alternatives are chosen from six conservation practices, used alone or in combination, that SCS has determined to be most suited to local conditions. These are contour farming, stripcropping, winter cover, reduced tillage, no-till, and terraces. For each alternative, the program shows how much soil loss will be reduced and the costs over the life of the practice or practices. The alternatives are then printed out for each field on carbon duplicate computer paper. The carbon sets, available through the U.S. General Services Administration, save time in making copies.

When the printout is ready, Barb Coleman, district secretary, phones the farmer to set up an appointment for reviewing the information. Tuesdays and Thursdays are set aside exclusively for meetings with farmers to examine the alternatives and make decisions for highly erodible fields.

By having farmers come to the office, the staff can see 7 to 9 farmers per day.

The farmer and an SCS employee sit down together at the computer terminal and go over the alternatives, field by field. If changes are needed, or the landowner wants to try something different, they can input the changes into the computer and get a new printout immediately. As the farmer decides what to do on each field, the selected alternative is circled, dated, and initialed on the printout by the farmer. The printout then becomes the documentation for the decisions that will make up the farmer's conservation plan.

Farmers like the computer program. It's fast and professional and gives them the information they need. They don't have to understand how the computer works to see all the information for a given field and see how the different alternatives affect the erosion rate. Farmers know that erosion is a problem in the county but many are surprised to find it occurring on their own fields.

When farmers have made decisions on all the highly erodible fields, they receive the original copy of the printout. Information from the printout is used to complete the SCS-CPA-68 form (Record of Cooperator's Decisions), which becomes the official con-

servation plan for the HEL fields once it is approved by the conservation district. A carbon copy of the NYCOSTS printout and the SCS-CPA-68 are placed in the brown envelope so that all of the documentation for the completed plan is in one place and SCS can provide follow-up services for the farmer. The AD-1026 certification form and a completed CPA-026 form (Highly Erodible Land and Wetland Conservation Determination) are then taken back to the Agricultural Stabilization and Conservation Service so that the farmer's application for program benefits can be completed. For benefits from Farmers Home Administration, a copy of the final conservation plan is also required.

By changing practice costs to reflect local prices, the NYCOSTS program is easily adapted to other counties. It is already helping to bring technology and teamwork to the complex task of conservation planning in half the counties in the State.

Robert Ingham,
district conservationist, SCS, Auburn, N.Y., and
Patricia Paul,
public affairs specialist, SCS, Syracuse, N.Y.



A conservation practice chosen by many farmers in the area is planting corn with no-till, at left. In another field, SCS personnel, above, evaluate the quality of a forage stand and its ability to protect the soil from erosion.

Conservation Reserve Cuts Soil Loss



Reduced erosion is saving 209 million tons of soil annually on the initial 8.2 million acres of land enrolled in 1986 in the U.S. Department of Agriculture's (USDA's) Conservation Reserve Program (CRP), said Wilson Scaling, chief of the Soil Conservation Service.

"The information we've collected so far indicates that the program is exceeding our expectations," said Scaling. The data is based on acreage from the first three signup periods, all in 1986. More than 10 million acres of land were added in the February 1987 signup, but erosion reduction information is not yet available.

The goal of the CRP is to retire 40-45 million acres of highly erodible cropland by 1990. SCS officials say if the goal is met, approximately 825 million tons of soil will be saved each year.

"The average annual erosion rate on the 8.2 million acres contracted under CRP in 1986 will drop from 27.3 to 1.9 tons per acre when in permanent cover," Scaling said.

"Our information shows that USDA is enrolling land with a very high erosion rate—that is the intention," Scaling said. "Generally, the States with the highest amounts of erosive land are the States having the highest numbers of acres enrolled."

Farmers from 44 States and Puerto Rico are participating in CRP with Texas and Colorado having the largest numbers of acres contracted through 1986.

Land enrolled in CRP is ineligible for cropping and must be planted with permanent vegetative cover.

Participants receive cost-share payments of up to 50 percent of the cost of establishing trees or grass on the acreage placed in the program. The average cost-share amount to be paid by USDA is \$37.51 per acre. These payments partially reimburse farmers for the one-time costs of establishing required conservation practices on the cropland.

Farmers also receive annual rental payments for retiring their land through 10-year contracts. The average rental rate to be paid to 1986 participants is \$45.53.

The next CRP signup will be July 20-31 at county Agricultural Stabilization and Conservation Service offices.

Field Office Finds New Source of Help

A new program of the Human Services Department in Eau Claire County, Wisc., is helping to get more conservation on the ground. Through the county's Work Relief Program, the Eau Claire Soil Conservation Service field office is receiving clerical and other help in managing the conservation planning workload created by the conservation provisions established under the Food Security Act of 1985.

Through the Work Relief Program, county welfare recipients work a certain number of hours in return for welfare payments, and the Human Services Department provides them Workers' Compensation Insurance.

SCS is responsible for reporting once a month to Human Services the number of hours Work Relief employees have worked and how they are doing on the job. In the past year, the Eau Claire SCS field office has had nine Work Relief employees, and six are still on board.

This new source of office help is proving invaluable. Work Relief employees have been trained to locate farmers' fields on U.S. Department of Agriculture Agricultural Stabilization and Conservation Service aerial photographs and mark the location on SCS soil maps, a time-consuming task. They're putting together planning folders for each farm and placing into them a copy of the soil map and soil descriptions. Work

Relief employees are also assisting with conservation group planning sessions with farmers.

The new employees are gaining clerical job experience and will be trained to assist with surveying and other field tasks, enabling SCS professionals to accomplish more field work in less time.

Gregory R. Hines,
district conservationist, SCS, Eau Claire, Wisc.

Pesticide Use and Conservation Tillage

In recent years, farmers across the Nation have steadily increased the use of conservation tillage—in one form or another—to reduce soil erosion associated with crop production. Instead of turning the soil over with a plow, as in conventional tillage, farmers using conservation tillage leave crop residues on the soil and use herbicides to kill weeds.

"Conservation tillage does not necessarily mean that you have to use more pesticides," said Richard Fawcett, a weed scientist for the Extension Service of the U.S. Department of Agriculture. "While it's difficult to measure, evidence shows that, on the average, farmers are applying about the same amounts of pesticides for conservation tillage as they are for conventional tillage."

Fawcett, who is assigned to Iowa State University in Ames, Iowa, recently reviewed research on the impact of conservation tillage on weeds and insects and the use of pesticides to control these crop pests. He reported his findings at a symposium on "Conservation Tillage—Environmental Impact on Surface and Ground Water" sponsored by the U.S. Environmental Protection Agency (EPA) in June 1986 in Chicago, Ill.

The pesticides applied on crop fields are mostly herbicides for killing weeds and insecticides for killing insects. According to Fawcett, herbicides account for about 85 percent of the total pesticide use in the United States.

"The general public perceives conservation tillage as requiring a lot more herbicides," said Fawcett. "What is often forgotten is how much herbicides are used with conventional tillage. Herbicides are used on more than 90 percent of the corn and soybean fields—regardless of the tillage method."

Fawcett said extensive research has been conducted on the impact of different types of tillage on weeds and the use of herbicides. One significant finding, he said, is that herbicide use may be higher during the first few years of a conservation tillage system, particularly if the field has a history of poor weed control. With time, however, the need for herbicides tends to decrease

because conservation tillage leaves the weed seeds near the soil surface. Seeds in shallow soil germinate quickly and can be controlled early. With deep tillage systems, he said, weed seeds lie dormant and germinate over a longer period, producing chronic weediness.

"After a few years, no-till fields can be much less weedy," Fawcett said. "If the farmer can control weeds during the first few years, it gets easier."

No-till is a conservation tillage method in which only a narrow seedbed is disturbed for planting. A common pitfall with no-till, Fawcett said, is for farmers to apply too much herbicide during their first few years with the practice. In an Iowa study, one farmer spent only a third as much for soybean herbicides in his fifth year of no-till as he did in his first.

"We can attribute most cases of excessive use of herbicides in no-till to inexperience," said Fawcett. "Changing to no-till can change the kinds of weeds present which may require different, not more, herbicides. But until the farmer gains experience, there may be a tendency to over use herbicides."

As more and more farmers have switched to conservation tillage, Fawcett said, their overall efficiency with the practice has improved. A 1984 survey of the EPA Lake Erie Demonstration Project showed that conservation tillage farmers and conventional tillage farmers used comparable rates of herbicides.

Fawcett said another type of conservation tillage, ridge-till, drastically reduces the need for herbicides. Ridge-till uses cultivation as an integral part of the system. This enables farmers to apply herbicide in a band only over the crop row, reducing by at least half the amount of herbicide used in other systems, such as conventional tillage, in which herbicide is broadcast evenly across the field.

"There's no doubt that the continued adoption of conservation tillage will change the kinds of herbicides that are used, because weed problems change as tillage systems change," Fawcett said. "But overall, it doesn't appear there is a significant increase in total herbicide use."

The picture on insecticide use is not so clear. Insecticide use on corn, for example, may or may not increase with no-till. According to Fawcett, surveys show that some farmers use more and some farmers use less.

"When they use more insecticides," he said, "there are generally good biological reasons for it. The residue or early weed growth can increase the amount of habitat for insects." He noted, however, that the 1984 Lake Erie study showed no difference in the amount of insecticide used for corn and soybeans under no-till, ridge-till, and conventional tillage systems.

Lynn Betts,
public affairs specialist, SCS, Des Moines, Iowa



Conservation tillage and terracing protect the soil on this Iowa farm from erosion. Corn is planted in the stubble of the previous year's crop.

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Soil Conservation Service
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CCC Alumni To Meet

Civilian Conservation Corps (CCC) reunions this summer include one in Illinois and one in Texas.

In Carlinville, Ill., "CCC Camp Carlinville Day" is scheduled for July 17 at the site of the former camp at the present Macoupin County Fairgrounds. The program will include an assembly of CCC alumni, dedication of a memorial, a display of camp memorabilia, and photos and descriptions of soil and water conservation practices installed by the CCC. For more information contact Andy M. Kmetz, 1715 West Haven Drive, Champaign, IL 61820.

A bronze memorial plaque in honor of Louis P. Merrill will be unveiled September 5 at a reunion of alumni of the CCC camp in Lindale, Tex. Merrill directed the Duck Creek Soil Erosion Project at Lindale from 1933 to 1936 and later served with the newly formed Soil Conservation Service as regional conservator for Texas, Arkansas,

Louisiana, and Oklahoma. For more information contact Dale L. Bidwell, Route 1, Box 1505, Arp, TX 75750.

These reunions are endorsed by the National Association of Civilian Conservation Corps Alumni. This association has 125 chapters across the Nation and can be contacted at P.O. Box 16429, St. Louis, MO 63125-0429.

The CCC was created in 1933 to reduce unemployment. The young men serving in the CCC lived in camps and planted trees, built ponds, stabilized streambanks, cleaned up after floods, built flood prevention structures, built and repaired roads, fought forest fires, built fire towers and made fire trails, restored historical sites, and performed other public works.

Comments Sought On RCA Appraisal

For 60 days beginning in mid-July, the U.S. Department of Agriculture (USDA) will seek public comment on its most recent appraisal of the Nation's soil, water, and related resources.

The appraisal is the second authorized by the Soil and Water Resources Conservation Act (RCA) of 1977. The first RCA appraisal resulted in the 1982 National Conservation Program and was used in formulating the Food Security Act of 1985.

The current appraisal updates conditions and trends in land use; soil erosion; salt buildup in soils; range resources; acid rain; wildlife habitat; off-site effects of soil erosion, including effects on water quality; and other resource concerns. It also contains a chapter on resource projections.

Review copies of the appraisal draft can be obtained through offices of the Soil Conservation Service, USDA's lead agency in conducting the appraisal.

New Publications

Directory of Conservation Tillage Audio-Visual Materials

Nine pages of items are listed by category, including general conservation tillage material, no-till, mulch-tillage, ridge-till, and commercial products.

Identified are the types of materials available including films, slide and slide-tape programs, film strips, and videotapes.

Another section describes various conservation tillage computer software programs which

include conservation tillage, calculating soil loss, soil conservation, and a soil conservation game teaching soil conservation and conservation tillage practices.

The publication lists the theme of the materials, rental or purchase costs if applicable, and sources, contact addresses, and telephone numbers.

Single copies of the audio-visual directory are free to members of the Conservation Technology Information Center (CTIC), while the cost to non-members is \$10.

Information about other CTIC products and services is available by contacting the CTIC, Executive Park, 2010 Inwood Drive, Fort Wayne, Ind. 46815; telephone (219) 426-6642.

Two Publications Available for Native Americans

The U.S. Department of Agriculture (USDA) has produced two publications especially for Native Americans on using agricultural resources more effectively and increasing employment.

The first document titled, "Agricultural Programs and Activities for Native Americans: USDA Services and Agribusiness Highlights of North American Indians and Alaska Natives," contains information about Native American agribusiness activities and USDA agencies that work most closely with American Indians and Alaska Natives. The publication includes reproductions of several historical photographs.

The second document, "American Indian and Alaska Native Youth Career Development Guide," is a counseling manual designed to help Native American youth move into vocations. The booklet emphasizes agribusiness, conservation, and natural resources.

A limited supply of these publications are available from Stuart Jamieson, coordinator of Indian affairs, USDA, Office of Governmental and Public Affairs, Room 102-A, Washington, D.C. 20250.